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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,261	03/09/2005	Yong-Ki Park	930086-2008	2904

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EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/527,261	Applicant(s) PARK ET AL.	
	Examiner Patricia L. Hailey	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/09/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Applicants' Preliminary Amendment, filed on March 9, 2005, has been made of record and entered. No claims have been canceled or added; claims 1-7 remain pending in this application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on March 9, 2005.

Claim Objections

2. *Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.*

Claim 4 fails to further limit the subject matter of claim 1, from which claim 4 depends. The subject matter of claim 4 is relevant to the perfluoro-compounds recited in claim 1; however, claim 1 is directed to an *aluminum oxide catalyst*.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. *Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Chao (U. S. Patent No. 4,629,717).*

Chao teaches a phosphorus-modified alumina (considered to read upon “aluminum oxide” and “aluminum trihydroxide” in claim 2) composite comprising a hydrogel having a molar ratio on an elemental basis of phosphorus to aluminum of from 1:1 to 1:100. See the Abstract of Chao, as well as col. 3, lines 28-32 and Table 1, Samples 2 and 3 (which depicts modified aluminas in terms of Al:P molar ratios).

The reference, at col. 4, lines 17-30, discloses exemplary sources of phosphorus, including those recited in Applicants’ claim 3.

In view of these teachings, Chao anticipates claims 1-3.

5. *Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. 03-261617.*

The Japanese Patent discloses phosphorus-modified alumina, obtained by blending aluminum alkoxide with a phosphoric acid (a component recited in claim 3) in an atomic ratio of aluminum atom to phosphorus (Al/P) of 5-200, thereby overlapping Applicants’ “mole ratio of 10 to 100”. See the Purpose and Constitution of the Japanese Patent.

In view of these teachings, the Japanese Patent anticipates claims 1 and 3.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. *Claims 1 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rossin (U. S. Patent No. 6,509,511) in view of Chao (U. S. Patent No. 4,629,717).*

Rossin teaches a process for the decomposition of perfluoroalkanes via contact thereof with a catalyst comprising alumina. The catalyst preferably comprises a stabilizing agent (if present, in amounts ranging from 1 to 100 parts by weight per 100 parts alumina, see col. 6, lines 40-43 of Rossin), examples of which include phosphorus. See the Abstract of Rossin, as well as col. 3, lines 45-56 and col. 6, lines 14-39, the latter disclosing pseudoboehmite and aluminum hydroxide as exemplary sources of alumina.

The process takes place in the presence of water (col. 4, lines 30-46 of Rossin) and at elevated temperatures ranging from at least 400°C, and, especially preferred, temperatures of at least 600°C. See col. 4, line 66 to col. 5, line 6 of Rossin, as well as the Examples, which additionally disclose exemplary gas streams comprising the perfluoroalkanes and, more specifically, water, in amounts considered within the limitations recited in claim 6 and 7.

Exemplary perfluoroalkanes suitable for decomposition include trifluoromethane (CHF₃) and hexafluoroethane (C₂F₆). See col. 5, lines 44-52 of Rossin.

Although Rossin discloses a catalyst comprising alumina, and a stabilizing agent that can be phosphorus, this reference does not specifically disclose the molar ratio recited in claim 1.

Chao is relied upon for its teachings in the above 102(b) rejection. The phosphorus-modified alumina disclosed therein is considered comparable to the catalyst disclosed in Rossin.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Rossin by substituting the catalyst disclosed therein with the catalyst disclosed in Chao, and thereby obtain Applicants' claimed invention.

Conclusion

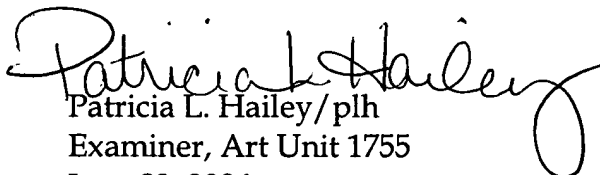
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patricia L. Hailey/plh
Examiner, Art Unit 1755
June 23, 2006


DAVID BRUNSMAN
PRIMARY EXAMINER
GROUP 1100